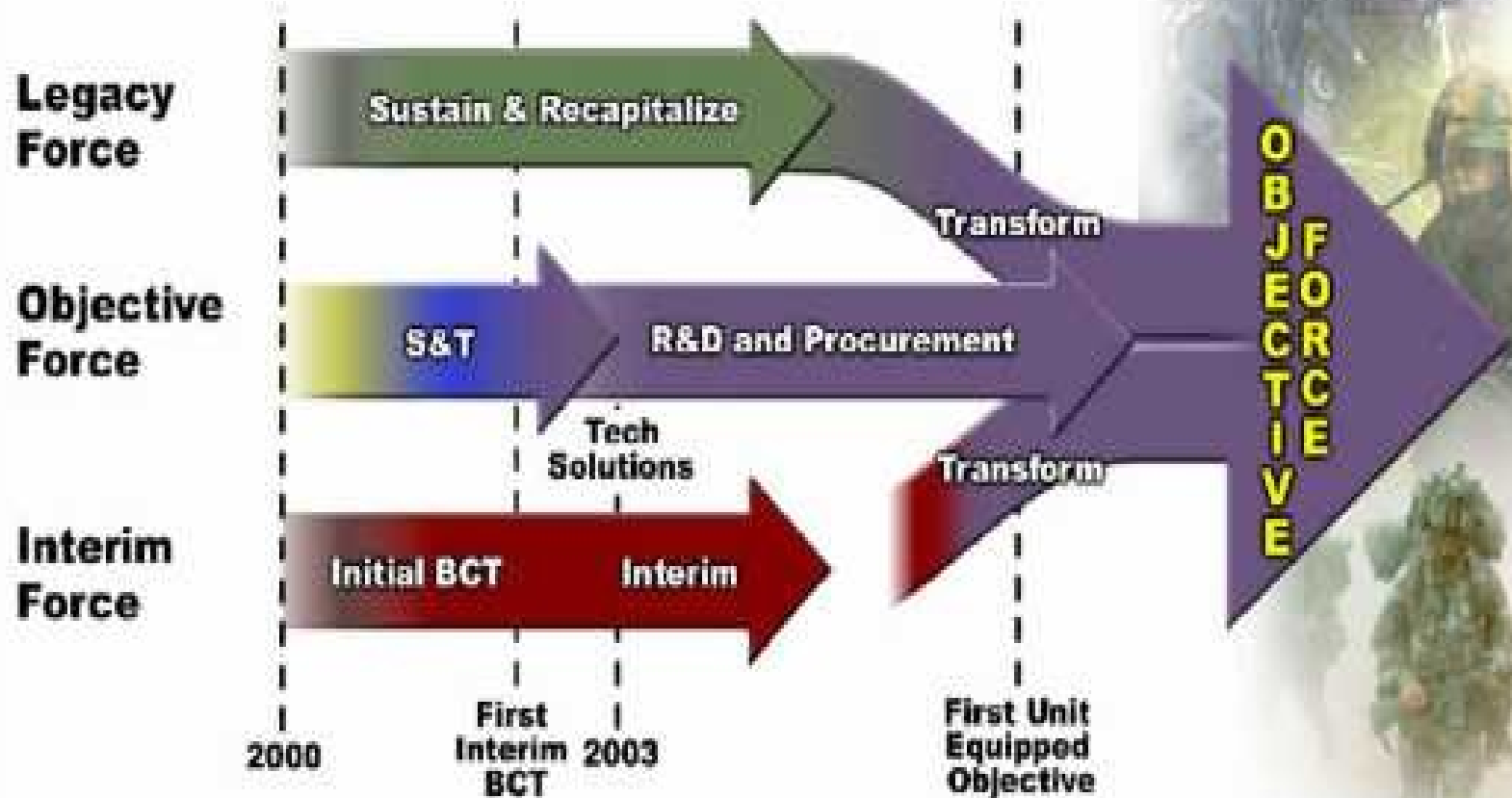


# **OVERVIEW OF ARMY REQUIREMENTS FOR LOTS**

**Dr. Donald T. Resio  
Senior Scientist**

**Coastal and Hydraulics Laboratory  
USARMY ENGINEERING RESEARCH &  
DEVELOPMENT CENTER  
VICKSBURG, MISSISSIPPI**

# ***Future Army Force Projection***



# ***Employment Considerations: Considerations at the Outset of Combat***

**As combat operations commence, joint force commanders seek decisive advantage quickly, before close combat if possible, by exploiting full dimensional leverage to shock, demoralize, and disrupt opponents immediately.**

## **Force Projection**

**Opposed  
Unopposed**

## **Dimensional Superiority**

**Air  
Sea  
Space  
C4I  
Fire  
Mobility**

## **Direct Attack**

**Direct attack  
of enemy  
strategic  
centers of  
gravity**

## **Special Operations**

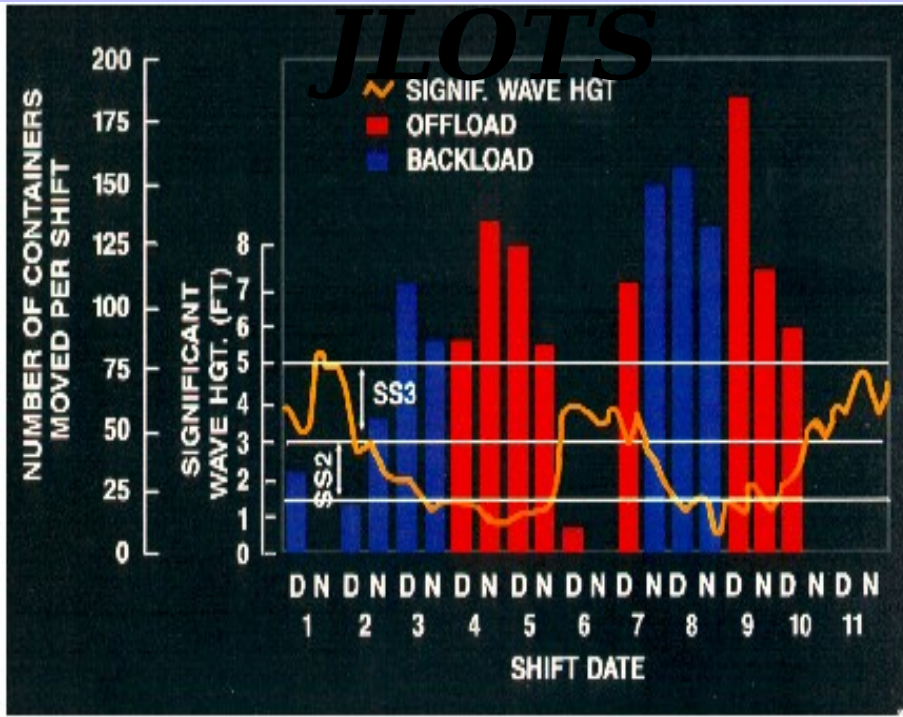
## **Force Protection**

**Make personnel  
systems, and  
units difficult to:**  
**Locate**  
**Strike**  
**Destroy**  
**Consider and  
make provisions  
for:**  
**Health**  
**Warfare**  
**Morale**  
**Maintenance**

# Requirement For Improved

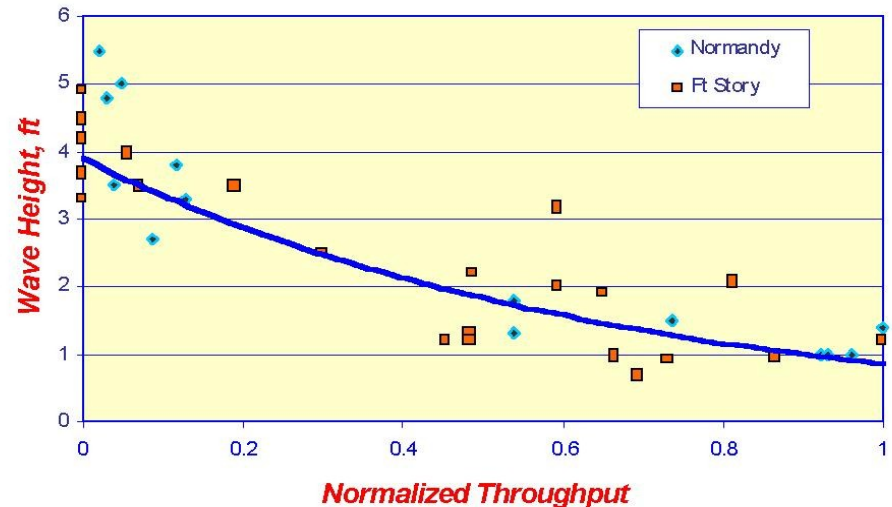
## JLOTS

## JLOTS Exercise And Real World Experience
















No  
Improvement  
in SS3  
Capability  
Since

*Throughput vs Wave Height,  
Normandy, 1944 and Ft Story, 1984*

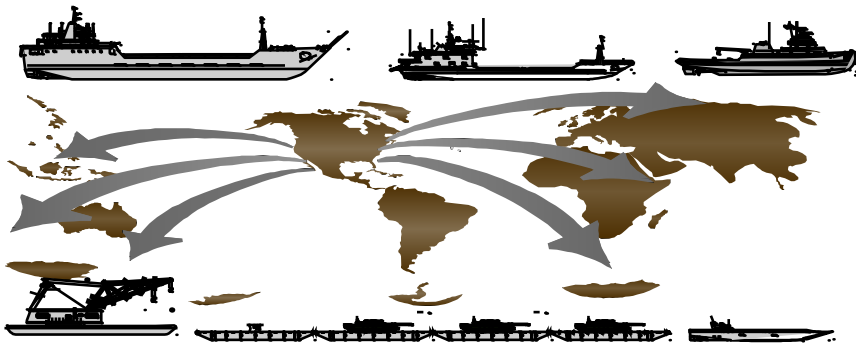


# Assessment of Primary Technical Problems in Existing JLOTS Sea State 3

		Stat	Possible Solutio
<div>Offshore transfer from sealift ship to lighter</div>	• RRDF motions		RIB <sub>n</sub>
	• Relative motion cargo - lighter		RIB
	• Relative motion ship - lighter		RIB
	• Relative motion interface ship/lighter/RRDF		RIB/Improved Ramps
	• Relative motion cargo - ship*		Improved Cranes
<div>Transit to coast</div>	• Water over deck (needs at least 4' freeboard)		
	- LSV/LCU		
	- Causeway Ferry		JMLS (?)
	• Nearshore bar clearance for self-beaching lighters		
<div>Discharge onto Shore/Causeway</div>	- MCS		_____
	- JMLS		_____
	• Causeway motions		Nearshore RIB
	• Relative motion lighters - causeways		Nearshore RIB
	• Interface lighter - causeway		Nearshore RIB
	• Motions of lighters at/on shore		Nearshore RIB

\* Not very important in Korea, Persian Gulf,  
Mogadishu, Mediterranean, Caribbean

# Army Watercraft Restructuring Concept Plan (AWRCP)



**POC: Major Dave Crum, DCD-Trans, CASCOM**  
**DSN 687-2086 CML (804) 734-2086**  
**Email - crumd@lee.army.mil**

## Background:

The AWRCP resulted from a Chief of Transportation directed DTLOMS analysis of the Army watercraft program. The plans recommends developing CONUS and OCONUS watercraft support packages to improve strategic and operational responsiveness to the CINCs. Reduce and balance the force structure through increased multi-component (COMPO 1 & 3) units. Modernize the fleet through divestments, modifications, enhancements, and upgrades, and investing R&D and procurement funding to enhance future capabilities. The concept plan has been briefed to the ARSTAF, JCS J4, FORSCOM, AMC, and the combatant commands.

## Concept Requirements:

PREPO/ Forward Stationed/ CONUS Based Craft Distribution:

Location	Vessel Type									
	LSV	LCU 2000	LT	ST	LCM8	BD	RRDF	CF	FC	BG
CENTCOM	1	10	2	4	8	1	2	1	2	1
EUCOM	1									
PACOM	4	10	2	4	8	1	2	1	2	1
CONUS			3	14		2	4	14	2	2
TOTAL	9	34	6	12	30	4	6	3	6	3

Force Structure: *(Approved IAW ARSTRUC)*

- Active and USAR force structure is reduced by 264 soldiers
- AC in-activation: 1 Heavy Boat Co; 1 Floating Craft Co; 1 LARC Det
- USAR in-activation: 1 Floating Craft Co; 1 Med Boat Co
- Force Structure Endstate: 7 - AC Cos & Dets; 4 USAR Cos & Dets; 8 Multi-COMPO Cos & Dets

## Concept Requirements:

Fleet Modernization:

- Divest 135 selected legacy craft. *(DCSOPS approved)*
- Upgrade CEN (C4ISR) across the fleet.
- Enhance vessel capabilities through selective modifications.
- Invest R&D and OPA:
  - 1 Theater Support Vessel (TSV)
  - 2 Joint Modular Lighterage System (JMLS)
  - 1 Rapidly Installed Breakwater (RIB)
  - 1 Harbormaster Command and Control Center (HCCC)

Training and Readiness Oversight: Assign 143rd TRANSCOM TR&O for watercraft support operations.

# Theater Support Vessel (TSV)



POC: CW3 Ray Aube, DCD-Trans, CASCOM  
DSN 687-0337 CML (804) 734-0337  
Email - auber@lee.army.mil

**Background:** The Theater Support Vessel (TSV) will be the Army's Next Generation self-deploying Watercraft. Leveraging technologies developed within the commercial sector and DoD; the TSV will be optimized to support intra-theater operational & tactical movement and maneuver for the objective force while retaining the capability to provide intra-theater lift and sustainment support for the interim and legacy forces.

## Capabilities:

TLV ORD Approved 17 Jan 00

- Speed: Threshold = 24 knots  
Objective = 40 Knots
- Range Threshold: 4726 NM @ 24 knots  
Objective: 8700 NM @ 24 knots & 1250NM @ 40 knots
- Cargo: Threshold = 1,670 ST/10,500 Ft<sup>2</sup> cargo area  
Objective = 2,650 ST/15,000 Ft<sup>2</sup> cargo area

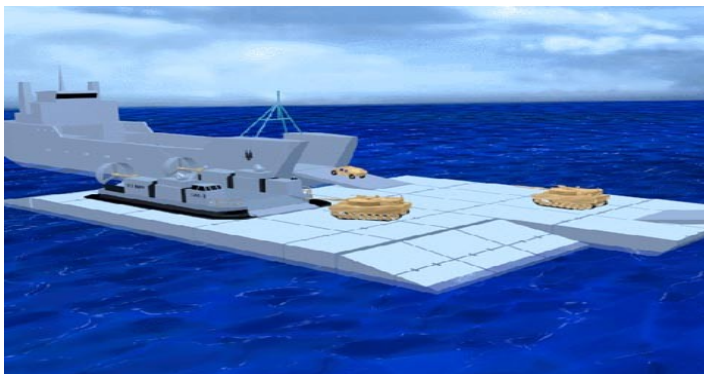
Emerging Capabilities To Be Reflected in Revised ORD

- Speed: Threshold = 40 knots  
Objective = 40+ Knots
- Range Threshold: 4726 NM @ 40 knots  
Objective: 8700 NM @ 24 knots & 4726 NM @ 40 knots
- Cargo: Threshold = 1,250 ST/25,000+ Ft<sup>2</sup> cargo area  
Objective = 1,500 ST/25,000+ Ft<sup>2</sup> cargo area

## Requirements:

\$M	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07
RDTE								
6.4	.523	1.2	2.0					
UFR		3.8	3.0					
6.5				1.98	1.1	1.62	5.03	
UFR				3.02	3.9			
OPA								41
UFR						85.0	85.0	43
QTY						(1)	(1)	1

# Joint Modular Lighter System (JMLS)



**POC: CW4 Mike Keith**  
**CASCOM, DCD-Trans**  
**DSN 687-1615 COM (804) 734-1615**  
**Email: keithm@lee.army.mil**

**Background:** The Joint Modular Lighter System (JMLS) will be a Sea State 3 (SS3) capable causeway system, enabling the services to conduct SS3 LOTS/JLOTS operations IAW "system of systems" strategy articulated in Joint Vision 2010.

Developed as an Advanced Concept Technology Demonstration (ACTD) with JFCOM tasked to provide Command and Control throughout the ACTD to assess military utility. The Military Utility Assessment (MUA) was scheduled to occur in FY00 this scheduled slipped until FY01. Due to performance, operational, and structural problems and a decision by both services to develop a 24' wide module the ACTD was terminated.

T&E will continue on existing equipment through Mar 01 to take advantage of SS3 conditions

## Capabilities:

JMLS ORD (draft stage)

- Be service interoperable
- Interface with existing vessels and lighters
- Be capable of offload, assembly, operations, maintenance, disassembly and reload through Sea State 3
- Increase logistics sustainment and throughput

## Requirements:

Proposed IAW AWRCP:

- 6 Roll-On/Roll-Off Discharge Facilities
- 3 Causeway Ferries
- 3 Floating Causeways
- 12 Warping Tugs
- 3 Barges

These requirements reflect three packages:

- CONUS Training and possible SOUTHCOM use
- PACOM Pre-positioned package
- CENTCOM Pre-positioned package

Funding:

- Current POM (8' modules): 167.04 \$M
- Estimated cost (24' modules): 125.28 \$M

# Harbormaster Command and Control System (HCCC)



**POC: Major Dave Crum, DCD-Trans, CASCOM**  
**DSN 687-2086 CML (804) 734-2086**  
**Email - crumd@lee.army.mil**

## Status:

- New Program
- ORD pending approval at TRADOC
- CEP conducted FY00
- RDT&E partially funded in FY01

## Basis of Issue:

- 1 per THOD (4 Active Component & 4 USAR)
- 2 in PREPO - 1 per AWRCP PREPO site

**Mission:** Provides the Transportation Harbormaster Operations Detachment(s) (THOD) with the capability to provide command and control of watercraft and lighters in support of port operations, Joint/Logistics over the Shore, intra-theater movement/resupply. The HCCC provides communications between Army, Navy, Air Force, USMC, Coast Guard, coalition, host nation and civilian vessels and elements via AM/FM, UHF, VHF, tactical and satellite modes (secure and non-secure). Provides near real time tracking of vessels via marine surface radar and MTS. Allows for the collection and dissemination of meteorological and bathymetric data to shipping in the area, and to establish vessel traffic control schemes, safe haven plans, beaching lanes and anchoring areas.

## Program Schedule/Fielding:

FY	2000	2001	2002	2003	2004	2005
Schedule	CEP	ORD	DT	OT	FLD	FLD
RDT&E		.8M				
OPA						
UFR						
RDT&E		.8M	.5M	.5M		
OPA					5.6M	8.4M
FLD QTY					2	3

## Acquisition Strategy:

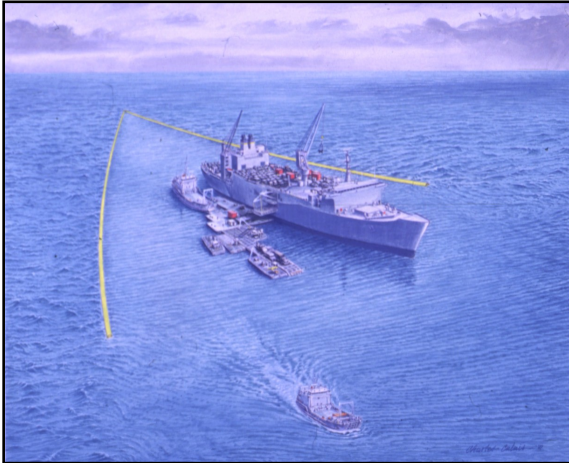
- Approve ORD and compete for POM Funding
- Procure 2 prototype systems - 1 West Coast / 1 East Coast
- Develop Prototype Test and Evaluation Plan
- Use T&E and data to develop HMO doctrine and SOPs
- Update ORD based on T&E findings
- Field HCCC system

Approved by ASTWG, AUG  
98

# Enhanced Coastal Trafficability And Sea State Mitigation

*DTO MP.28.01*

*Advanced Technology  
Demonstration  
START DATE: FY99*

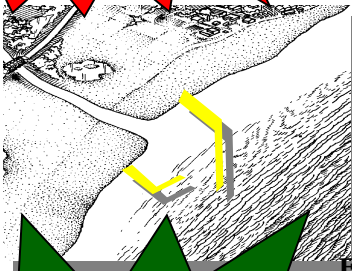


**Dr. Don Resio**  
**USAE Research & Development  
Center**  
**Waterways Experiment Station**  
**Telephone: (601)634-2018**  
**E-mail: [d.resio@cerc.wes.army.mil](mailto:d.resio@cerc.wes.army.mil)**

# Port Operations Rapid Throughput System (PORTS)

**Project Objective:** To demonstrate the capability to rapidly repair/construct integrated port facilities that can accommodate intermediate-draft, very-high-speed cargo vessels, providing a four-fold increase in Force Projection throughput over existing JLOTS capacities.

Lack of port availability is the primary limiter for effective Sealift throughput

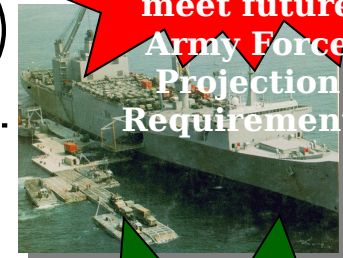


Rapid breakwater technology will allow port repair/enhancement / construction in critical theater areas around the globe

Sealift from CONUS

Intermediate Staging Base

JLOTS throughput rates are inadequate to meet future Army Force Projection Requirement



Primary Throughput

Secondary Throughput

Intratheater Movements

Enhanced Small Ports with Mechanized MHE/CHE

Enhanced Connection to Infrastructure

Primary Ops Area

JLOTS Site

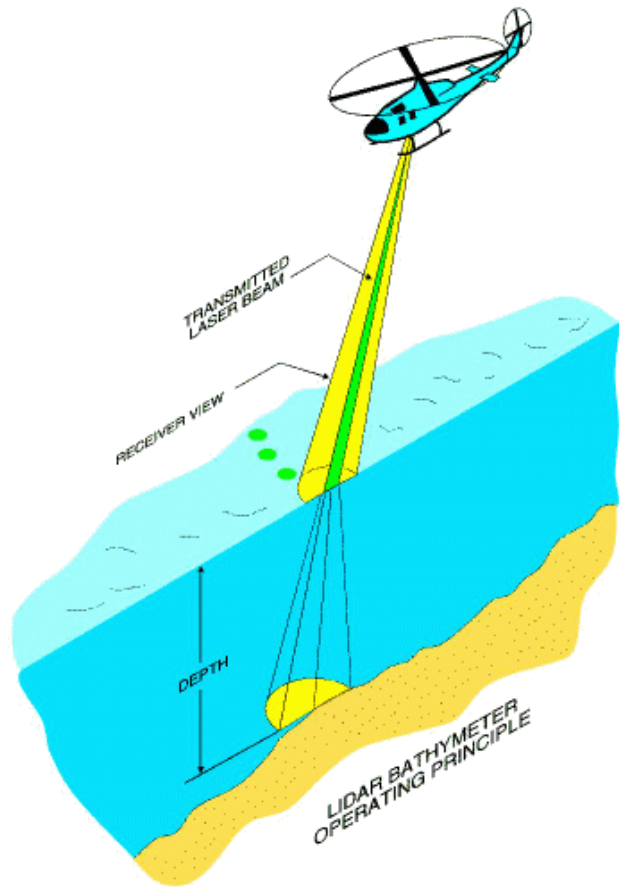
JLOTS Site

Secondary Ops Areas

Mechanized MHE/CHE and robust link to infrastructure dramatically increase throughput over manual JLOTS methods

**Project the Force**

# LITTORAL ENVIRONMENTAL DATA SHOALS



- RAPID BATHYMETRY DATA
- UNMANNED VERSION BEING DEVELOPED
- SUPPORTS BOTH MILITARY & CIVIL WORKS EFFORTS

# ***JLOTS SOFTWARE DEVELOPMENT***

- Coastal Integrated Throughput Model
- PORTSIM
- Global Littoral Sea State Climatology
- OTHERS ?

***Questions/Comments***